

IN THE CLAIMS:

Please amend the claims as indicated in the following listing of claims. This listing replaces any previous listing of claims.

Claims 1-27. (Canceled).

28. (Currently Amended) A method in a data processing system for accessing network services associated with a lookup service, comprising the steps of:

receiving a request from a client by the lookup service for access to one of the network services, the client being remote with respect to the lookup service; and

returning, by the lookup service, a resource locator to the client, the resource locator including ~~a reference to the one network service and data for dynamically loading executable code to facilitate access of~~ for accessing the one network service; and [.]

providing, by a second network service that is initially inaccessible through the lookup service, information to the lookup service to enable the second network service to be accessible through the lookup service.

29. (Currently Amended) The method of claim 28, further comprising the step of:

using the returned resource locator to dynamically load the executable code for accessing ~~to facilitate access of~~ the one network service.

30. (Previously presented) The method of claim 29, further comprising the step of:

accessing the network service by the client using the dynamically loaded executable code.

31. (Previously Presented) The method of claim 28, wherein the step of returning a resource locator includes the step of:

returning stub information to the client.

32. (Previously presented) The method of claim 31, further comprising the step of:

using the resource locator in the client to dynamically load executable code for the stub.

33. (Previously presented) The method of claim 32, further comprising the step of:

accessing the network service by the client using the dynamically loaded executable code.

34. (Previously presented) The method of claim 28, wherein the step of returning a resource locator includes the step of:

returning smart proxy information to the client.

35. (Previously presented) The method of claim 34, further comprising:
using the resource locator in the client to dynamically load executable
code for a smart proxy.

36. (Previously presented) The method of claim 35, further comprising the
step of:
accessing the network service by the client using the dynamically loaded
executable code.

37. (Currently Amended) A method in a data processing system having a
lookup service with a plurality of services, the method comprising the steps of:
sending from a client to the lookup service a request to access one of the
services, the lookup service being remote with respect to the client; and
receiving, responsive to the request, by the client from the lookup service,
a resource locator including ~~a reference to the one network service and~~ data for
dynamically loading executable code for accessing ~~to facilitate access of~~ the one
network service₁[[.]]

wherein a second network service that is initially inaccessible through the
lookup service provides information to the lookup service to enable the second network
service to be accessible through the lookup service.

38. (Currently Amended) The method of claim 37, further comprising the step of:

using the received resource locator to dynamically load executable code for accessing ~~to facilitate access~~ of the one service.

39. (Previously Presented) The method of claim 38, further comprising the step of:

accessing the one service by the client using the dynamically loaded executable code.

40. (Previously presented) The method of claim 37, wherein the step of receiving a resource locator comprises the step of:

receiving stub information; and

using the resource locator to dynamically load executable code for the stub.

41. (Previously Presented) The method of claim 40, further comprising the step of:

accessing the one service by the client using the dynamically loaded executable code.

42. (Previously presented) The method of claim 37, wherein the step of receiving a resource locator comprises the step of:

- receiving smart proxy information; and
- using the resource locator to dynamically load executable code for a smart proxy.

43. (Previously Presented) The method of claim 40, further comprising the step of:

- accessing the one service by the client using the dynamically loaded executable code.

44. (Currently Amended) A distributed system with a plurality of network services, comprising:

- a server computer with a lookup service having a resource locator corresponding to ~~the one network service and~~ data for dynamically loading executable code for accessing ~~for facilitating access of~~ one of the network services; and
- a client computer with a program that sends a request to the lookup service for the one network service, that receives the resource locator from the server computer, the resource locator including ~~a reference to the one network service and~~ data for dynamically loading executable code for accessing ~~to facilitate access of~~ the one network service, and uses the resource locator to dynamically load the executable code to access the one network service; and

a second network service that is initially inaccessible through the lookup service configured to provide information to the lookup service to enable the second network service to be accessible through the lookup service.

45. (Currently Amended) A data processing system for accessing network services associated with a lookup service, comprising:

means for receiving a request from a client by the lookup service for access to one of the network services, the client being remote with respect to the lookup service; and

means for returning a resource locator to the client from the lookup service, the resource locator including a ~~reference to the one network service and data for dynamically loading executable code for accessing the one network service; and to facilitate access of the one network service.~~

means for providing information from a second network service that is initially inaccessible through the lookup service to the lookup service to enable the second network service to be accessible through the lookup service.

46. (Currently Amended) A computer-readable medium containing instructions for controlling a data processing system to perform a method for accessing network services associated with a lookup service, the method comprising the steps of:

receiving a request from a client by the lookup service for access to one of the network services, the client being remote with respect to the lookup service; and

returning a resource locator to the client from the lookup service, the resource locator including ~~a reference to the one network service~~ and data for dynamically loading executable code ~~to facilitate access of~~ for accessing the one network service; and

providing, by a second network service that is initially inaccessible through the lookup service, information to the lookup service to enable the second network service to be accessible through the lookup service.

47. (Currently Amended) The computer-readable medium of claim 46, wherein the method further comprises the step of:
using the returned resource locator to dynamically load executable code for accessing ~~to facilitate access~~ of the one network service.

48. (Previously presented) The computer-readable medium of claim 47, wherein the method further comprises the step of:
accessing the network service by the client using the dynamically loaded executable code.

49. (Previously presented) The computer-readable medium of claim 46, wherein the step of a returning a resource locator comprises the step of:
returning stub information to the client.

50. (Previously presented) The computer-readable medium of claim 49, wherein the method further comprises the step of:

using the resource locator in the client to dynamically load executable code for the stub.

51. (Previously presented) The computer-readable medium of claim 50, wherein the method further comprises the step of:

accessing the network service by the client using the dynamically loaded executable code.

52. (Previously presented) The computer-readable medium of claim 46, wherein the step of returning a resource locator comprises the step of:

returning smart proxy information to the client.

53. (Previously presented) The computer-readable medium of claim 46, wherein the step of returning a resource locator comprises the step of:

using the resource locator in the client to dynamically load executable code for a smart proxy.

54. (Previously presented) The computer-readable medium of claim 53, wherein the method further comprises the step of:

accessing the network service by the client using the dynamically loaded executable code.

55. (Currently Amended) A computer-readable medium containing instructions for controlling a data processing system to perform a method for accessing network services associated with a lookup service, the method comprising the steps of:

sending from a client to the lookup service a request to access one of the services, the lookup service being remote with respect to the client; and

receiving, responsive to the request, by the client from the lookup service, a resource locator including ~~a reference to the one network service~~ and data for dynamically loading executable code for accessing ~~to facilitate access of the one network service; and~~

providing, by a second network service that is initially inaccessible through the lookup service, information to the lookup service to enable the second network service to be accessible through the lookup service.

56. (Currently Amended) The computer-readable medium of claim 55, wherein the method further comprises the step of:

using the received resource locator to dynamically load executable code for accessing ~~to facilitate access of the one network service.~~

57. (Previously presented) The computer-readable medium of claim 56, wherein the method further comprises the step of:

accessing the network service by the client using the dynamically loaded executable code.

58. (Previously presented) The computer-readable medium of claim 55, wherein the step of receiving a resource locator includes the step of:

receiving stub information; and

using the resource locator to dynamically load executable code for the stub.

59. (Previously presented) The computer-readable medium of claim 58, wherein the method further comprises the step of:

accessing the network service by the client using the dynamically loaded executable code.

60. (Previously presented) The computer-readable medium of claim 55, wherein the step of receiving a resource locator includes the step of:

receiving smart proxy information; and

using the resource locator in the client to dynamically load executable code for a smart proxy.

61. (Previously presented) The computer-readable medium of claim 60, wherein the method further comprises the step of:

accessing the network service by the client using the dynamically loaded executable code.

62. (Currently Amended) A method in a data processing system for accessing network services associated with a lookup service, comprising the steps of:

receiving a request from a client by the lookup service for access to one of the network services; and

returning, by the lookup service, executable code to the client ~~to facilitate the access to~~ for accessing the one network service, wherein the executable code is configured to store data obtained from the one network service for subsequent use,

providing, by a second network service that is initially inaccessible through the lookup service, information to the lookup service to enable the second network service to be accessible through the lookup service.

63. (Previously Presented) The method of claim 62, further including the step of:

accessing the network service using the returned executable code.

64. (Previously Presented) The method of claim 62, wherein the step of returning the executable code includes the step of:

returning a stub embedded within the executable code.

65. (Previously Presented) The method of claim 62, wherein the executable code returns the stored data to a system requesting the data from the one network service following the generating step.

66. (Previously Presented) The method of claim 62, wherein the receiving step includes the step of:

receiving the request to access the one network service such that the one network service is identified by a type of service.

67. (Previously Presented) The method of claim 62, wherein the receiving step includes the step of:

receiving the request to access the one network service such that the one network service is identified by a service identification number.

68. (Previously Presented) The method of claim 62, wherein the receiving step includes the step of:

receiving the request to access the one network service such that the one network service is identified by an attribute of the one network service.

69. (Previously Presented) The method of claim 62, wherein the step of returning executable code includes the step of:

returning a plurality of stubs included in respective smart proxies
associated with a plurality of network services that match the request.

70. (Previously Presented) The method of claim 69, wherein the step of
returning a plurality of stubs includes the step of:

returning attributes associated with each stub.

71. (Currently Amended) A method in a data processing system having a
lookup service with a plurality of services, the method comprising the steps of:

sending to the lookup service a request to access one of the services; and

receiving executable code, from the lookup service and responsive to the
request, ~~that facilitates use of~~ for accessing the one service wherein the executable
code is configured to store data obtained from the one service for subsequent use,

wherein a second network service that is initially inaccessible through the
lookup service can provide information to the lookup service to enable the second
network service to be accessible through the lookup service.

72. (Previously Presented) The method of claim 71, further including the step
of:

accessing the one service using the received executable code.

73. (Currently Amended) The method of claim 71, wherein the step of receiving executable code includes the step of:

receiving a stub ~~that facilitates access~~ for accessing of the one service.

74. (Previously Presented) The method of claim 73, wherein the executable code is a smart proxy including the stub.

75. (Currently Amended) A method in a data processing system having a first computer with a client and a second computer with a lookup service containing service stubs used for accessing associated services, the method comprising the steps of:

sending a request by the client to the lookup service identifying one of the associated services to be accessed;

receiving the request by the lookup service;

searching the lookup service for the identified service;

returning a service stub associated with the identified service to the client, wherein the service stub is embedded in executable code configured to store data obtained from the one network service for subsequent access by the client;

receiving the service stub by the client;

loading the service stub into an address space of the client to render the service stub available for use to invoke the identified service; and

using the stub by the client to access the identified service.

wherein a second network service that is initially inaccessible through the lookup service provides information to the lookup service to enable the second network service to be accessible through the lookup service.

76. (Previously Presented) The method of claim 75, wherein the sending step includes the step of:

sending a request for more than one service to be returned, and wherein the returning step further includes the step of:

returning more than one stub to the client in response to the request.

77. (Previously Presented) The method of claim 75, wherein the searching step includes the step of:

returning a null value if no service is found matching the request.

78. (Currently Amended) A distributed system with a plurality of network services, comprising:

a server computer with a lookup service having stubs for accessing ~~facilitating access~~ to the network services; and

a client computer with a program that sends a request to the lookup service for one of the stubs corresponding to one of the network services, that receives the stub, and that accesses the one network service using the received stub, wherein

the stub is embedded in executable code configured to store data obtained from the one network service for subsequent access,

wherein a second network service that is initially inaccessible through the lookup service is configured to provide information to the lookup service to enable the second network service to be accessible through the lookup service.

79. (Previously Presented) The distributed system of claim 78, wherein the client computer utilizes a remote procedure call mechanism to receive the stub.

80. (Currently Amended) A system having a first computer with a client and a second computer with a lookup service containing service stubs used for accessing associated services, the system comprising:

means for sending a request by the client to the lookup service identifying one of the associated services to be accessed;

means for receiving the request by the lookup service;

means for searching the lookup service for the identified service;

means for returning a service stub associated with the identified service to the client, wherein the service stub is embedded in executable code configured to store data obtained from the one network service for subsequent access;

means for receiving the service stub by the client;

means for loading the service stub into an address space of the client to render the service stub available for use to invoke the identified service; and

means for using the stub by the client to access the identified service,

wherein a second network service that is initially inaccessible through the lookup service is configured to provide information to the lookup service to enable the second network service to be accessible through the lookup service.

81. (Currently Amended) A computer-readable medium containing instructions for controlling a data processing system to perform a method for accessing network services contained in a lookup service, the method comprising the steps of:

receiving a request by the lookup service for access to one of the network services; and

returning, by the lookup service, executable code ~~to facilitate the access to~~ for accessing the one network service, wherein the executable code is configured to store data obtained from the one network service for subsequent use,

wherein a second network service that is initially inaccessible through the lookup service is configured to provide information to the lookup service to enable the second network service will be accessible through the lookup service.

82. (Previously Presented) The computer-readable medium of claim 81, wherein the method further includes the step of:

accessing the network service using the returned executable code.

83. (Previously Presented) The computer-readable medium of claim 81, wherein the returning step includes the step of:

returning a stub embedded in the executable code to the client.

84. (Previously Presented) The computer-readable medium of claim 81, wherein the executable code returns the stored data to a system requesting the data from the one network service following the generating step.

85. (Currently Amended) A computer-readable medium containing instructions for controlling a data processing system to perform a method for accessing network services contained in a lookup service, the method comprising the steps of:

sending to the lookup service a request to access one of the services; and

receiving executable code, from the lookup service and responsive to the request, ~~that facilitates use of~~ for accessing the one service, wherein the executable code is configured to store data obtained from the one service for subsequent use,

wherein a second network service that is initially inaccessible through the lookup service is configured to provide information to the lookup service to enable the second network service will be accessible through the lookup service.

86. (Previously Presented) The computer-readable medium of claim 85, wherein the method further includes the step of:

accessing the one service using the received executable code.

87. (Currently Amended) The computer-readable medium of claim 85,
wherein the step of receiving executable code includes the step of:
receiving a stub ~~that facilitates access~~ for accessing of the one service.

88. (Previously Presented) The computer-readable medium of claim 85,
wherein the executable code is a smart proxy including the stub.

89. (Currently Amended) A system for accessing network services,
comprising:
a client configured to provide requests for accessing respective ones of the
network services; and
a lookup service configured to provide resource locators to the client in response
to the respective requests, each resource locator corresponding to a respective request
and including data to enable the client to dynamically load executable code to access a
respective one of the network services,
wherein a second network service that is initially inaccessible through the lookup
service is configured to provide information to the lookup service to enable the second
network service will be accessible through the lookup service.